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United States
Department of
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Animal and
Plant Health
Inspection
Service

In Cooperation with

USDA's
Forest Service

and

United States
Department of the
Interior

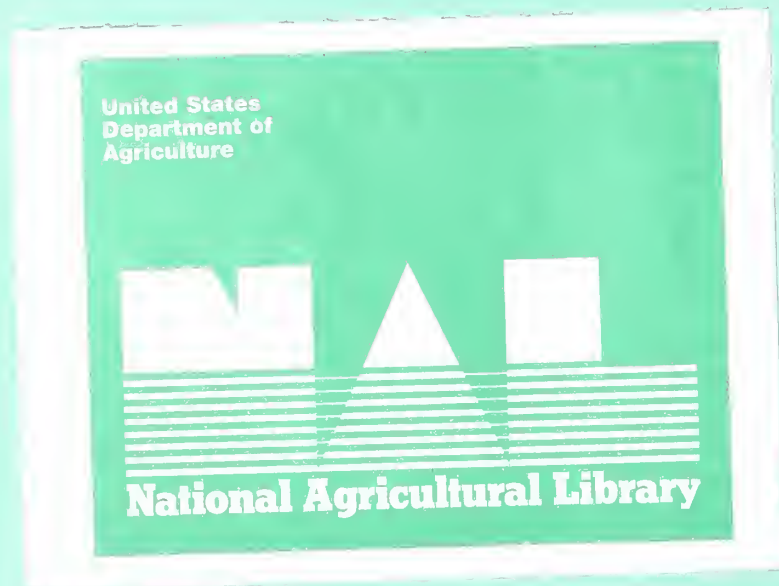
Bureau of
Land Management

Animal Damage Control Program

Final Environmental Impact Statement

Summary

Volume 1 of 3



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Issued: April 1994
Revised: October 1997

Animal Damage Control Program

Final Environmental Impact Statement

United States Department of Agriculture
Animal and Plant Health Inspection Service

In cooperation with

United States Department of Agriculture
Forest Service
and
United States Department of the Interior
Bureau of Land Management

U.S.D.A., NAL

Cataloging Prep

Location:

The 50 States of the United States, its territories and possessions

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This Environmental Impact Statement Made Available

Issued: April 1994
Revised: October 1997

Prepared By:

United States Department of Agriculture
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Abstract

USDA conducts an animal damage control program that employs an integrated pest management approach to prevent or reduce wildlife damage to agriculture, natural resources, facilities and structures, and for the safeguarding of public health and safety. This programmatic EIS examines 13 alternatives and provides detailed analyses of the No Action Alternative, Current Program Alternative, Nonlethal Control Program Alternative, Nonlethal Before Lethal Control Program Alternative, and Damage Compensation Program Alternative. The analyses focus on the wildlife species affected, losses associated with wildlife damage, societal values or attitudes, and impacts on biological, economical, and physical aspects of the human environments. The Current Program Alternative, which uses an integrated pest management (IPM) approach to address wildlife damage problems, is the preferred alternative.

Animal Damage Control Program

Final Environmental Impact Statement

**United States Department of Agriculture
Animal and Plant Health Inspection Service**

**United States Department of Agriculture
Forest Service**

**United States Department of the Interior
Bureau of Land Management**

Readers Guide

This final Environmental Impact Statement (EIS) documents the analysis of the U.S. Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), Animal Damage Control (ADC) program for the protection of American agriculture, natural resources, and facilities and structures, and the safeguarding of public health and safety. The EIS follows the format recommended by the President’s Council on Environmental Quality (CEQ). Most EISs evaluate new projects, such as power plants or water impoundments. However, this EIS addresses an ongoing program of wildlife damage management. The intent is to analyze the impacts associated with the full range of wildlife damage control activities included in the Federal/Cooperative APHIS ADC program. This final EIS also analyzes the impacts associated with alternatives to the current APHIS ADC program.

The Readers Guide is provided to help orient readers and guide them through the document. The following guide shows the structure of the EIS and summarizes what the reader can expect to find in individual chapters. A brief Readers Guide also is provided at the beginning of each chapter.

A quick preview of this EIS can be obtained by reading the following:

- Summary.
- Introduction to Chapter 1 for an understanding of the decisions to be made.
- Table 2-2 for a comparison of the current APHIS ADC program, including direct control and technical assistance through an Integrated Pest Management (IPM) approach (APHIS’ preferred alternative), and other selected alternatives.
- Table of Contents to Chapter 3 for an overview of the affected environment.
- Table 4-42 for a summary and comparison of the impacts of the alternatives.

The appendices provide information on the development of this final EIS and more detailed technical data, procedures, and material than are presented in the body of the document.

Volume 1
Summary

Provides a condensation of the document.

Volume 2
Chapter 1: Purpose and Need

Provides an overview, including:

- | | |
|--|---|
| <ul style="list-style-type: none">• Decisions to be made• Background and history of Animal Damage Control (ADC).• Legal authorities, laws, and regulations | <ul style="list-style-type: none">• The National Environmental Policy Act (NEPA) process• Interrelationships• Requirements for further analyses |
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Chapter 2: Proposed Program Alternatives

Provides information pertaining to:

- Development of alternatives
- Current APHIS ADC program
- APHIS ADC Decision Model for Wildlife Damage Management Methods
- Other alternatives
- Comparison of alternatives
- Preferred alternative

Chapter 3: Affected Environment

Discusses those aspects of the human environment that are potentially affected by the alternatives described in Chapter 2, including:

- Protected resources, such as crops, livestock, facilities and structures, and public health and safety
- Target and nontarget wildlife and threatened and endangered species
- Economic environment
- Sociocultural environment
- Physical environment

Chapter 4: Environmental Consequences

Provides an analysis of the alternatives discussed in Chapter 2 and the effects on the environment discussed in Chapter 3. The consequences are presented as:

- Impacts of the five alternatives on the biological, economic, sociocultural, and physical environments
- Impacts of protecting crops, livestock, facilities and structures, and public health and safety on species abundance and diversity
- Direct, indirect, and cumulative impacts
- Unavoidable impacts and irreversible and irretrievable commitment of resources
- Comparison of impacts by alternatives

Chapter 5: Mitigation Measures

Discusses mitigation measures that potentially reduce impacts. These include:

- Standard operating procedures currently used in the APHIS ADC program
- Mitigation measures
- Monitoring and evaluation

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Summary

A. Introduction

This final Environmental Impact Statement (EIS) assesses the biological, sociocultural, economic, and physical impacts of alternatives for the U.S. Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), to conduct an Animal Damage Control (ADC) program. This EIS replaces the ADC program EIS prepared by the Department of the Interior, U.S. Fish and Wildlife Service (USFWS) in 1979.

In contrast to site-specific EISs which address proposals of a narrower scope within restricted geographic areas, this programmatic EIS addresses the entire APHIS ADC program, including its various functions, methods of operation, and locations throughout the Nation. This EIS complies with the National Environmental Policy Act (NEPA) of 1969 which establishes policies, goals, and procedures to ensure that Federal agency decisions reflect an understanding of the environmental consequences of a proposed action and its alternatives.

The draft to this EIS was issued in June 1990, and a supplement to the draft EIS was issued in January 1993. This final EIS addresses issues raised in scoping and in agency and public comments on the draft and supplement to the draft EIS. In particular, this final EIS includes a revised discussion of the purpose and need for the program (Chapter 1), the addition of two new alternatives (Chapter 2), an expanded analysis of economic impacts (Chapter 4), and a detailed risk assessment of wildlife damage control methods used by the program (Appendix P).

Wildlife is generally regarded as having value, whether measured by economic, recreational, or aesthetic standards. However, wildlife also causes negative impacts to America's agriculture, facilities and structures, natural resources, and to public health and safety. The APHIS ADC program strives to manage the damage caused by wildlife by providing environmentally balanced wildlife damage management services that are safe, effective, and practical.

The primary statutory authority for the APHIS ADC program is the Animal Damage Control Act of March 2, 1931, as amended (7 U.S.C. 426-426c; 46 Stat. 1468). APHIS ADC activities are conducted at the request of and in cooperation with other Federal, State, and local agencies; private organizations; and individuals.

Wildlife damage management is practiced as a field of specialization within the wildlife management profession. The APHIS ADC program uses an Integrated Pest Management (IPM) approach to prevent or minimize wildlife conflict. IPM, as used or recommended by the APHIS ADC program, includes the integration and application of all practical methods of prevention and control to reduce wildlife damage. The APHIS ADC IPM approach incorporates resource management, physical exclusion, and wildlife management, or a combination of these damage control approaches. The selection of methods and development of application strategies is predicated on consideration of the specific biological, sociocultural, economic, physical, and other environmental circumstances associated with each wildlife damage situation.

In applying the IPM approach, the APHIS ADC program may offer technical assistance, direct control, or both in response to requests for help with wildlife damage problems. Technical assistance consists of advice, recommendations, information, or materials provided for use in managing wildlife damage problems. Direct control consists of identification of the source of the problem and implementation of practical, appropriate control actions by APHIS ADC personnel.

The APHIS ADC program also provides leadership in the science of wildlife damage management through an active research program emphasizing control methodologies designed to minimize risks to humans, the potential affected wildlife species, and the environment.

B. Purpose and Need

Summary

Improving and developing control methods, maintaining pesticide registrations, and disseminating scientific information are the primary functions of the Denver Wildlife Research Center.

C. Proposed Program Alternatives

Scoping (i.e., agency and public involvement in the determination of the issues to be addressed in an EIS) is required by the Council on Environmental Quality (CEQ) Regulations for Implementing National Environmental Policy Act Procedures (40 CFR, Section 1501.7). Scoping for this EIS began on November 16, 1987. The following 13 alternatives were selected as representative of the alternatives suggested by the public in scoping and in commenting on the drafts and are consistent with the issues affecting the present APHIS ADC program:

- No Action Alternative (no ADC program activity under APHIS).
- Current Program Alternative.
- Nonlethal Control Program Alternative.
- Nonlethal Before Lethal Control Program Alternative.
- Damage Compensation Program Alternative.
- Direct Control Only, With Supporting Research Alternative.
- Technical Assistance Only, With Supporting Research Alternative.
- Conversion of Direct Control Programs to Education and Technical Assistance, With Transfer of Funds and Responsibilities to USDA Extension Service Alternative.
- Reduction of Federal Manpower and Transfer of Federal Control Operations to Private Contractors Alternative.
- Transfer of Current Program, Including Funds, to State Wildlife Management Agencies Alternative.
- Continuation of Western Coyote Work at APHIS; Transfer of Eastern Bird Work to USFWS Alternative.
- Eradication Alternative (all program efforts directed toward planned, total elimination of specific pest wildlife populations in designated areas).
- Suppression Alternative (all program efforts directed toward planned, long-term reduction of specific pest wildlife populations in designated areas).

The 13 alternatives are described in Chapter 2. The No Action Alternative, Current Program Alternative, Nonlethal Control Program Alternative, Nonlethal Before Lethal Control Program Alternative, and Damage Compensation Program Alternative were selected as being the most reasonable and appropriate alternatives for detailed analysis in this EIS. The analysis of these alternatives covers the range of impacts of the other alternatives considered. NEPA does not require that all possible outcomes for each alternative be addressed. Instead, a reasonable range of outcomes are evaluated and presented to describe and clarify basic underlying issues and impacts and to provide the decision maker with a clear means to discriminate between the various biological, sociocultural, economic, and physical environmental consequences of the alternatives.

D. The Preferred Alternative

Based on the environmental analysis in Chapter 4, the Current Program Alternative is identified as the USDA APHIS preferred alternative to meet responsibilities under the Animal Damage Control Act of 1931 and other applicable laws.

E. Affected Environment

The biological, economic, sociocultural, and physical environments potentially could be affected by any of the alternatives. The biological environment is described in Chapter 3 in terms of the wildlife species affected. The economic environment is described in terms of the value of production related to the major crops and livestock protected by the APHIS ADC program and the value of losses attributable to wildlife damage to these resources. The sociocultural environment is described in terms of the major groups within American society that hold values or attitudes potentially impacted by APHIS ADC program activities. The physical environment includes air, water, soil, and human health. A comprehensive risk assessment of all program methods was conducted to support the impact analysis. To provide a comparable baseline and standard against which to evaluate each alternative, fiscal year (FY) 1988 data were used for most of the analyses.

1. Resources Protected

The APHIS ADC program assists in the protection of agricultural resources, manmade structures and facilities, wildlife species of concern and other natural resources, and in reducing threats to public health and safety throughout the United States. APHIS ADC activities are highly variable among States and are dependent on damage control requests and needs, authorities provided to APHIS ADC, results of environmental analyses, technical expertise, and availability of personnel and funding. The APHIS ADC program provides damage control assistance for only a small percentage of the total amount of resources damaged by wildlife in the United States. The resources protected by the APHIS ADC program are discussed in detail in Chapter 3, Affected Environment, and are grouped under the following general categories:

a. Field Crops

Corn, barley, rice, sunflowers, wheat, and other field crops are damaged or consumed by a variety of birds and mammals (e.g., prairie dog, beaver, deer, pocket gopher, waterfowl, and blackbird).

b. Fruits and Nuts

Apples, cherries, grapes, almonds, and other fruit and nut crops are damaged or consumed by birds and mammals (e.g., crow, starling, magpie, blackbird, deer, pocket gopher, raccoon, and squirrel).

c. Commercial Forests/Forest Products

Hardwood and softwood trees and seedlings are damaged by mammals feeding, or by dam-building activities (e.g., field rodents, beaver, black bear, and deer).

d. Grazing Lands and Other Resources

Pastures and rangelands are damaged by digging, feeding, or dam-building activities (e.g., badger, feral hog, beaver, gopher, prairie dog, jackrabbit, and kangaroo rat).

e. Aquaculture and Mariculture

Commercial fisheries are subject to depredation by birds (e.g., cormorant, heron, and egret) to species such as bass, bluegill, catfish, crawfish, bait minnows, trout, lobsters, mussels, salmon, and shrimp.

f. Livestock

Sheep, lambs, calves, goats, and other domestic livestock are killed, injured, or harassed by mammals (e.g., coyote, bobcat, mountain lion, domestic dog, black bear, fox, raccoon, skunk) and birds (e.g., golden eagle, raven, and black vulture). Other birds, blackbirds and starlings in particular, indirectly injure livestock through the transmission of infectious diseases or cause economic losses by competing for livestock food.

g. Facilities and Structures

Property (e.g., private homes, barns, commercial and industrial buildings, public facilities, lakes, pools, reservoirs, golf courses, telephone poles, fences, landfills and dumps, dikes and impoundments, irrigation ditches, and landscapes) is damaged from nesting, burrowing, digging, chewing, and defecation by various species (e.g., skunk, squirrel, raccoon, bat, and woodpecker).

h. Public Health and Safety

Public health and safety are threatened by strikes and other damage to aircraft and airport facilities from birds (e.g., sparrow, finch, starling, mourning dove, gull, crow, pigeon, raptor, duck, and goose) and mammals (e.g., deer, moose, and coyote), and by wildlife-borne diseases (e.g., rabies, plague, and histoplasmosis).

2. Biological Environment

a. Target and Nontarget Species

Components of the biological environment affected or potentially affected by the APHIS ADC program include target and nontarget animals. The focus of APHIS ADC damage control activities is target species—birds and mammals that cause damage to crops, livestock, and other resources or present hazards to public health and safety. Nontarget species are animals that are inadvertently captured, injured, killed, or otherwise adversely affected during the conduct of wildlife damage control activities. For purposes of this final EIS, 17 target species or species groups listed below are considered sound representatives of the wildlife species impacted by APHIS ADC program activities conducted throughout the United States.

- Mammals
 - Badger
 - Beaver
 - Black bear
 - Bobcat
 - Coyote
 - Gray fox
 - Mountain lion
 - Nutria
 - Opossum
 - Porcupine
 - Prairie dog
 - Raccoon
 - Red fox
 - Striped skunk
- Birds
 - Blackbird group
 - Cattle egret
 - European starling

b. Natural Resources of Special Concern

An important function of the APHIS ADC program is that of assisting other government agencies with protecting rare wildlife populations and other natural resources of special concern. Examples include the protection of greater sandhill cranes at the Malheur National Wildlife Refuge in Oregon, and the protection and reclamation of natural trout streams in Wisconsin in cooperation with the Wisconsin Department of Natural Resources.

c. Threatened and Endangered Species

Over 300 animal species in the United States are federally listed as threatened or endangered. The APHIS ADC program has identified approximately 125 animal and 22 plant species that might be affected by some aspect of the program. Through formal consultation as prescribed by the Endangered Species Act (ESA), the USFWS narrowed the number of animal species to eight that could be jeopardized by APHIS ADC activities unless prescribed mitigation measures were adopted by APHIS ADC. The potentially impacted species and mitigation are discussed in detail in the USFWS Biological Opinion (Appendix F), and a summary is provided in Chapter 5. APHIS ADC will adopt the mitigation measures to avoid adverse impacts to the eight animal species.

3. Economic Environment

Information on the value of production is presented for representative agricultural crops and livestock resources. The resources selected for inclusion were chosen because they have a relatively high national economic value and are subject to the various types of damage attributable to depredating mammals and birds. The agricultural resources used to define the economic environment include:

- Field and Forest Crops
 - Field Crops (alfalfa, corn, rice, soybeans, sunflowers, and wheat)
 - Fruits and Nuts (apples, cherries, grapes, and pecans)
 - Commercial Forests/Forest Products (trees and timberland)
- Aquaculture and Mariculture
 - Freshwater (catfish)
- Livestock
 - Cattle and Calves
 - Goats
 - Poultry (chickens and turkeys)
 - Sheep and Lambs
 - Swine

Determining the volume of agricultural resources lost is difficult. Discriminating among losses caused by injury, disease, weather, insects, and other causes and losses caused solely by wildlife complicates this determination. Crop and livestock damage attributable to wildlife involves two types: (1) loss of the current market value of the crops or livestock at the stage of growth when the damage occurred, and (2) loss of the potential value of the crops or livestock if they had ripened or matured and then been sold. Confirmation of losses is documented by APHIS ADC primarily to substantiate that damage is occurring and assistance is needed to control the damage. Confirmed loss data are collected for

only a small percentage of the total resource lost. As a result of the large amount of time, effort, and expense required to compile wildlife damage data, no detailed analysis is made by APHIS ADC to estimate the losses for an entire State or the total resource affected by wildlife for purposes of this EIS.

4. Sociocultural Environment

The sociocultural environment affected by the present APHIS ADC program or the alternatives includes the values and attitudes of a large cross section of American society. The groups or individuals affected by the program fall into several categories, such as environmental, animal welfare, animal rights, and recipients of APHIS ADC program services. All views or attitudes regarding the APHIS ADC program are considered important to programmatic decisionmaking.

5. Physical Environment

The physical environment that might be affected by the present APHIS ADC program or the alternatives includes air, water, soil, and human health in all places where wildlife damage occurs or where damage control could be applied. However, the level of potential impact on the physical environment by chemical control methods is small, given the restrictive controls implemented by the U.S. Environmental Protection Agency on pesticides, and by APHIS ADC and other agencies on other damage control methods. Therefore, in keeping with CEQ regulations and the programmatic, national scope of this final EIS, the presently existing physical environment is not described.

F. Environmental Consequences

The impacts of the present APHIS ADC program are only a small part of the impacts of all wildlife management activities throughout the United States. For example, hunting, fishing, and trapping for furs may take more surplus individuals out of a population than APHIS ADC. The environmental impacts evaluated in this EIS include all identifiable direct, indirect, short-term, long-term, or cumulative impacts of the alternatives considered. The methods used to evaluate these impacts are presented in Chapter 4.

Impacts of chemicals used by APHIS ADC were evaluated in the draft EIS. This discussion has been revised and expanded to include qualitative and quantitative assessment of risks associated with nonchemical and chemical methods used or recommended by APHIS ADC (Appendix P).

Biological, sociocultural, economic, and physical impacts of the No Action Alternative, Current Program Alternative, Nonlethal Control Program Alternative, Nonlethal Before Lethal Control Program Alternative, and Damage Compensation Program Alternative are summarized in Table S-1. A comparison of the other alternatives, which are not presented in detail, is found in Table 4-43.

1. Cumulative Impacts

Cumulative impacts, as defined by CEQ (40 CFR 1508.7), are impacts on the environment that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of who undertakes such other actions. Based on the diversity and distribution of the affected environment, no significant cumulative impacts are identified or expected as a function of wildlife damage control activities conducted by the Current Program Alternative. Under the No Action

Alternative, Nonlethal Control Program Alternative, Nonlethal Before Lethal Control Program Alternative, or Damage Compensation Program Alternative, locally significant cumulative impacts could potentially result from uncoordinated control actions or misapplication of control methods by individuals.

2. Unavoidable Adverse Environmental Impacts

Some unavoidable adverse environmental impacts could occur from implementation of the proposed program alternatives. Mitigation efforts may alleviate or reduce the severity of some impacts.

The unavoidable adverse environmental impacts of the No Action Alternative are summarized as follows:

- The use of lethal methods would continue, resulting in the killing of wildlife.
- Local populations of target wildlife species could be adversely affected where Federal, State, and local agencies or individuals choose to implement lethal methods of wildlife damage control.
- More variability in application of control methods could increase the potential for impacts on nontarget species and threatened and endangered species.
- Producers could be adversely affected by higher costs if they choose to personally implement wildlife damage controls.
- Consumers could be adversely affected by higher costs related to the higher costs of production.
- Adverse sociocultural impacts would occur to groups favoring wildlife management practices of the present APHIS ADC program.

The unavoidable adverse environmental impacts of the Current Program Alternative are summarized as follows:

- Some local populations of target wildlife species are intentionally adversely affected to achieve damage control.
- The cost of the program to Federal taxpayers was \$25 million in FY 1988.
- Animal welfare and animal rights groups are adversely affected by wildlife damage control methods they consider inhumane or unnecessary.
- Despite program efforts to reduce wildlife damage, substantial damage and economic losses could still occur.

The unavoidable adverse environmental impacts of the Nonlethal Control Program Alternative are similar to those identified above for the No Action Alternative.

The unavoidable adverse environmental impacts of the Nonlethal Before Lethal Control Program Alternative are similar to those identified for the Current Program Alternative in most cases. Because of nonlethal constraint on APHIS ADC action in some damage situations, producers or other groups may seek assistance from an organization or individual that does not have this restriction or delay. In this case, the impacts could be similar to the No Action Alternative.

The unavoidable adverse environmental impacts of the Damage Compensation Program Alternative are summarized as follows:

- Adverse impacts would occur to some target wildlife species from individuals personally implementing lethal wildlife damage controls.

- Taxpayers could be adversely affected by subsidizing the costs (exceeding \$25 million) of a compensation program.
- Adverse sociocultural impacts would occur to groups favoring the results of wildlife management practices of the present APHIS ADC program.
- Human Health and Safety would not be addressed.
- Nonagricultural resources would not be addressed.

3. Irreversible and Irretrievable Commitment of Resources

Under the No Action Alternative there would be no irreversible or irretrievable commitment of energy resources by APHIS for wildlife damage control activities. However, other agencies and individuals would increase their consumption of fuel to cover the activities for which they would assume responsibility.

Under the Current Program Alternative, using FY 1988 as a typical year, the annual consumption of unleaded gasoline and diesel fuel by the APHIS ADC program is 493,918 gallons. An additional 55,261 gallons of aviation fuel also are used.

Under the Nonlethal Control Program Alternative, Nonlethal Control Before Lethal Control Alternative and Damage Compensation Program Alternative fuel use could be more or less than experienced in the present APHIS ADC program, depending on results of and response to the specific program alternative used.

G. Mitigation Measures and Monitoring

Mitigation measures are any features of an action that serve to prevent, reduce, minimize, or compensate for impacts that otherwise would result from that action.

Under the No Action Alternative, the APHIS ADC program could not provide mitigation because no APHIS effort or funds would be directed to wildlife damage control.

The present APHIS ADC program, in addition to using an IPM approach to wildlife damage control and complying with all applicable Federal, State, and local laws and regulations, is guided by standard operating procedures that reduce potential impacts and assist in the monitoring of the program. The following are procedures used by the present APHIS ADC program:

- The APHIS ADC program routinely consults with USFWS, Federal land management agencies, and State wildlife management or natural resource agencies regarding program activities and impacts. USDA Forest Service and BLM are cooperating agencies in this final EIS.
- The APHIS ADC program is conducted under Memoranda of Understanding with other Federal and State agencies. These define working parameters and responsibilities of participating agencies.
- Control methods used by the APHIS ADC program are as species specific as possible and are used with consideration for public health and safety.
- Nonlethal methods are used and recommended whenever practical.
- Research is conducted to study and improve the selectivity of control methodologies and to develop nonlethal alternatives.

- USDA APHIS has established a National Animal Damage Control Advisory Committee to advise the Secretary of Agriculture on policies and issues of concern in the national APHIS ADC program. The committee is composed of 20 individuals representing varied interests including agricultural producers, environmental and animal welfare organizations, and academic institutions.
- The APHIS ADC program uses a management information system (MIS) in all but three States to assist in the assessment of program activities and impacts. The three States are working to implement the MIS in their programs.
- The APHIS ADC program monitors program activities to ensure that local wildlife populations are not adversely impacted.
- The APHIS ADC program has adopted the “reasonable and prudent alternatives” recommended in the USFWS Biological Opinion, to avoid potential adverse impacts to threatened and endangered species.
- The APHIS ADC program consults with organizations that experience adverse sociocultural impacts and develops strategies for cooperation.
- Measures to avoid or reduce potential risks of chemical methods have been identified and adopted.
- Additionally, the APHIS ADC program conducts periodic evaluations to assess program effectiveness.
- An APHIS ADC manual (ADC Directives) has been developed to provide uniform guidance to all APHIS ADC personnel.

The present program has several additional mitigation and monitoring measures that are in the process of being implemented. They are as follows:

- The APHIS ADC program is completing nationwide implementation of the MIS to standardize data collection and reporting for the program. The MIS will assist APHIS ADC managers in more efficiently evaluating program impacts and effectiveness.
- Training on NEPA; the Federal Insecticide, Fungicide, and Rodenticide Act; and ESA is being provided for APHIS ADC supervisors and managers.
- An APHIS ADC strategic plan has been developed that addresses key program issues, such as professional recruitment and development, data needs, and program effectiveness in meeting present and future demands for wildlife damage control.
- APHIS ADC is developing literature for livestock producers that encourages the use of animal husbandry practices and nonlethal damage control alternatives.

The Current Program Alternative also has several potential mitigation measures available for consideration, including the following:

- Identify those proposed activities with a potential for adverse impacts when preparing annual work plans or other planning document. In cases where potential adverse impacts are anticipated, initiate consultations with the appropriate agencies to help identify mitigation measures and determine any required additional environmental documentation. This would ensure that site-specific impacts are identified, and appropriate mitigation measures implemented.
- Provide training in NEPA compliance procedures and implementation to appropriate administrative and field staff.
- Develop and use tranquilizer tabs on leghold traps to immobilize captured animals, thus reducing trap related injuries and increasing the likelihood that nontarget animals may be released successfully.

Summary

- Adopt a requirement for checking all traps and foot-snares daily to minimize the time that trapped animals will be restrained, thus reducing trap related injuries and increasing the likelihood that nontarget animals may be released successfully.
- Adopt the use of padded-jaw traps to reduce trap-related injuries to captured animals.
- Establish minimal husbandry standards as a prerequisite to receiving APHIS ADC services.
- Amend APHIS ADC pesticide labels as appropriate to provide species-specific protections for potentially affected threatened or endangered species.
- Implement APHIS ADC *Directive(s)* to provide species-specific protections for all threatened or endangered species that may be potentially affected by APHIS ADC program use of commercially registered pesticides.

Potential mitigation for the Nonlethal Control Program Alternative includes:

- Combine nonlethal control methods with damage compensation.
- Eliminate certain actions when nonlethal control methods fail to resolve a conflict (e.g., discontinue the raising of sheep where coyotes are a chronic problem; close airports when birds are a hazard to human safety).
- Make nonlethal control tools available without cost to resource managers.
- Increase research funding for nonlethal control methods.

Potential mitigation for the Nonlethal Before Lethal Control Program Alternative includes:

- Combine nonlethal before lethal control methods with damage compensation control methods until either nonlethal methods work or lethal methods are used.
- Increase research funding for nonlethal methods.
- Seek APHIS ADC authority to regulate husbandry standards (night penning, fencing, guarding dogs, etc.).

Potential mitigation for the Compensation Program Alternative includes:

- Require that some minimum level of animal husbandry be practiced by the claimant to be eligible for compensation payment.
- Implement a partial compensation program.
- Implement compensation after a minimum economic loss has been reached.
- Transfer lethal chemical control methods solely registered for use by APHIS ADC to other agencies, States, and individuals.
- Expand the authorized users of lethal methods for use by agencies, States, and individuals.
- Increase law enforcement funds for other agencies to prevent expected abuse of wildlife control techniques.
- Seek regulatory, investigative, and law enforcement authority for APHIS ADC.
- Seek APHIS ADC's authority to alter habitat on public and private lands.
- Use forms of compensation other than actual cash for losses suffered.

Table S-1

Comparison of Impacts of Alternatives Considered in Detail in This EIS

Impact	No Action Alternative	Current Program Alternative ^a	Nonlethal Control Program Alternative	Nonlethal Before Lethal Control Program Alternative	Damage Compensation Program Alternative ^b
BIOLOGICAL IMPACTS					
On Local Wildlife Species Diversity	Potential for significant adverse impact.	No significant impact.	Potential for significant adverse impact.	Potential for significant adverse impact.	Potential for significant adverse impact.
On Abundance of:					
Target Species					
Impacts of National or State Importance	No significant impact.	No significant impact.	No significant impact.	No significant impact.	No significant impact.
Local Impacts	Potential for significant adverse impact.	Potential for significant adverse impact.	Potential for significant adverse impact.	Potential for significant adverse impact.	Potential for significant adverse impact. Adverse impact likely to be greater at partial compensation levels.
Nontarget Species					
Impacts of National or State Importance	No significant impact.	No significant impact.	No significant impact.	No significant impact.	No significant impact.
Local Impacts	Potential for significant adverse impact.	Potential for significant adverse and beneficial impacts.	Potential for significant adverse impact.	Potential for significant adverse and beneficial impacts.	Potential for significant adverse impact.
Threatened and Endangered Species^c					
Impacts of National or State Importance	Potential for significant beneficial impact from Federal, state, or local agency actions. Potential for significant adverse impact from the actions of individuals.	Significant beneficial impact. USFWS Section 7 Consultation identifies "reasonable and prudent alternatives" to ensure significant adverse impact will not occur.	Potential for significant beneficial and adverse impacts. Potential for significant adverse impact from actions of individuals.	Potential for significant beneficial and adverse impacts. Potential for significant adverse impact from actions of individuals.	Potential for significant beneficial and adverse impacts. Adverse impact more likely from the actions of individuals at partial compensation. No provision for APHIS ADC to protect T&E species.
SOCIOCULTURAL IMPACTS^d					
Ecological Interest Group	Generally would not favor eliminating APHIS ADC program activities. Generally would not favor an increase of uncoordinated damage control actions by individuals.	Generally do not oppose wildlife damage control concepts. May not approve of all APHIS ADC program activities.	Generally would approve of a nonlethal program. Generally would not favor an increase of uncoordinated damage control actions by individuals.	Generally would approve of a nonlethal before lethal control program. May not approve of all APHIS ADC program activities.	Generally would not favor a compensation program in lieu of APHIS ADC program activities. Generally would not favor an increase of uncoordinated damage control actions by individuals.

(Continued)

Summary

Table S-1 (Continued)

Comparison of Impacts of Alternatives Considered in Detail in This EIS

Impact	No Action Alternative	Current Program Alternative ^a	Nonlethal Control Program Alternative	Nonlethal Before Lethal Control Program Alternative	Damage Compensation Program Alternative ^b
Animal Welfare	Generally would not favor eliminating APHIS ADC control methods considered humane. Generally would not favor an increase of wildlife control actions by individuals.	Generally do not oppose wildlife damage control concepts. Generally disapprove of APHIS ADC methods considered inhumane.	Would approve of a nonlethal program.	Generally do not oppose wildlife damage control concepts. Generally disapprove of APHIS ADC methods considered inhumane.	Generally would not favor compensation in lieu of eliminating APHIS ADC control methods considered humane. Generally would not favor an increase of uncoordinated damage control actions by individuals.
Animal Rightists	Would favor eliminating the APHIS ADC program. Would favor eliminating most wildlife damage control activities.	Generally disapprove of most wildlife damage control concepts. Generally disapprove of APHIS ADC program activities.	Generally disapprove of most wildlife damage control concepts. Generally would favor nonlethal over lethal methods.	Generally disapprove of most APHIS ADC activities. Generally disapprove of most wildlife damage control concepts.	Would favor compensation in lieu of wildlife damage control activities.
ADC Service Recipients	Generally would disapprove of losing APHIS ADC assistance. Potential for increased stress and loss of agricultural community viability.	Generally approve of current APHIS ADC program practices.	Generally would approve of nonlethal methods as long as they are effective. May conduct lethal controls on their own. Potential for increased agricultural losses and increased stress.	Generally approve of most methods used by the APHIS ADC program. May conduct lethal controls on their own. Potential for increased agricultural losses and increased stress.	Generally would favor parity compensation for wildlife damage. Generally would favor partial compensation for wildlife damage but would not favor loss of APHIS ADC program activities.
General Public	Generally would be unaware of impact of No Action Alternative.	Generally unaware of APHIS ADC program practices.	Generally would be unaware of impact of Nonlethal Control Program Alternative.	Generally would be unaware of impact of Nonlethal Before Lethal Control Program Alternative.	Generally would be unaware of impact of Compensation Program Alternative.

ECONOMIC IMPACTS

Direct Impacts on Affected Parties

Agricultural Losses Avoided or Risks Reduced	Significantly smaller impact than the Current Program Alternative is likely.	Relatively large impact compared to the other alternatives.	Smaller impact than the Current Program Alternative is likely.	Smaller impact than the Current Program Alternative is likely.	No impact, other than compensation of verified losses.
Non-Agricultural Losses Avoided or Risks Reduced	Significantly smaller impact than the Current Program Alternative is likely.	Relatively large impact compared to the other alternatives.	Smaller impact than the Current Program Alternative is likely.	Smaller impact than the Current Program Alternative is likely.	Impacts from non-APHIS ADC activities only.

(Continued)

Table S-1 (Continued)

Comparison of Impacts of Alternatives Considered in Detail in This EIS

Impact	No Action Alternative	Current Program Alternative ^a	Nonlethal Control Program Alternative	Nonlethal Before Lethal Control Program Alternative	Damage Compensation Program Alternative ^b
Damage Control Expenditures	Small or large, depending on role of the public sector.	Relatively small impact compared to the other alternatives.	Larger impact than the Current Program Alternative is likely.	Larger impact than the Current Program Alternative is likely.	Small or large, depending on role of the public sector.
Indirect impacts on Affected Parties					
Agricultural Losses Avoided or Risks Reduced for Third Parties	Significantly smaller impact than the Current Program Alternative is likely.	Relatively large impact compared to the other alternatives.	Significantly smaller impact than the Current Program Alternative is likely.	Smaller impact than the Current Program Alternative is likely.	Significantly smaller impact than the Current Program Alternative is likely.
Non-Agricultural Losses Avoided or Risks Reduced for Third Parties	Significantly smaller impact than the Current Program Alternative is likely.	Relatively large impact compared to the other alternatives.	Significantly smaller impact than the Current Program Alternative is likely.	Smaller impact than the Current Program Alternative is likely.	Impacts from non-APHIS ADC activities only.
Positive Contribution to the Local Economy	Significantly smaller impact than the Current Program Alternative is likely.	Relatively large impact compared to the other alternatives.	Smaller impact than the Current Program Alternative is likely.	Smaller impact than the Current Program Alternative is likely.	Smaller impact than the Current Program Alternative is likely.
Direct Public Impacts					
APHIS ADC Program Expenditures	None	Relatively small impact compared to the other alternatives.	Larger impact than the Current Program Alternative is likely.	Larger impact than the Current Program Alternative is likely.	Significantly larger impact than the Current Program Alternative is likely.
Potentially Harmful Environmental Effects	Significantly larger impact than the Current Program Alternative is likely.	Relatively small impact compared to the other alternatives.	Larger impact than the Current Program Alternative is likely.	Larger impact than the Current Program Alternative is likely.	Significantly larger impact than the Current Program Alternative is likely.
Indirect Public Impacts					
Non-APHIS ADC Program Expenditures	Large or small depending on role of the public sector, and public liability.	Relatively small impact compared to the other alternatives.	Larger impact than the Current Program Alternative is likely.	Larger impact than the Current Program Alternative is likely.	Large or small depending on role of the public sector, and public liability.
PHYSICAL IMPACTS					
Air					
Impacts of National or State Importance	No significant impact.	No significant impact.	No significant impact.	No significant impact.	No significant impact.
Local Impacts	No significant impact.	No significant impact.	No significant impact.	No significant impact.	No significant impact.

(Continued)

Summary

Table S-1 (Continued)

Comparison of Impacts of Alternatives Considered in Detail in This EIS

Impact	No Action Alternative	Current Program Alternative ^a	Nonlethal Control Program Alternative	Nonlethal Before Lethal Control Program Alternative	Damage Compensation Program Alternative ^b
Water (Surface and Groundwater)					
Impacts of National or State Importance	No significant impact.	No significant impact.	No significant impact.	No significant impact.	No significant impact.
Local Impacts	No significant impact.	No significant impact.	No significant impact.	No significant impact.	No significant impact.
Soil					
Impacts of National or State Importance	No significant impact.	No significant impact.	No significant impact.	No significant impact.	No significant impact.
Local Impacts	No significant impact.	No significant impact.	No significant impact.	No significant impact.	No significant impact.
Hazards to Humans					
	Potential for significant adverse impact to the general public and to individuals implementing wildlife damage controls.	Potential for localized and infrequent adverse impact to the general public and to individuals implementing wildlife damage controls.	Potential for significant adverse impact to the general public and to individuals implementing wildlife damage controls.	Potential for significant adverse impact to the general public and to individuals implementing wildlife damage controls.	Potential for significant adverse impact to the general public and to individuals implementing wildlife damage controls.

^a Impacts under the Current Program Alternative are based on information for FY 1988 as a representative, "snapshot" year for the APHIS ADC program.

^b Compensation would be provided by APHIS for losses to agricultural crops and livestock only.

^c Threatened and endangered species can be target or nontarget species under certain conditions or can be protected by the program. An effect on a threatened or endangered species is considered of national importance.

^d Issues and viewpoints expressed by various sociocultural groups are presented.

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